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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/508,771	03/16/2000	JINKO KIMURA	500.38296X00	8406

24203 7590 03/24/2004

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EXAMINER	
THORNTON, YVETTE C	

ART UNIT	PAPER NUMBER
1752	

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/508,771	KIMURA ET AL.	
	Examiner	Art Unit	
	Yvette C. Thornton	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19 and 21-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *1-19 and 21-37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is written in reference to application number 09/508,771 filed on March 16, 2000 and RCE filed on December 11, 2002.

Response to Amendment

1. Claims 1-19 and 21-37 are currently pending.

2. The amendment to the claims 1, 19 and 36 filed on December 17, 2003 introduces a limitation, which requires a reduction in air void after lamination. This is a process limitation on a product claim. More specifically, the claims recite method limitations (i.e., lamination, removal) that do not further define the material. Consequently, the burden shifts to the applicant to provide evidence of an unobviousness difference between the prior art and the claimed invention. See MPEP 2113.

Claim Interpretations

3. The claims contain the limitation that the number of claimed fish eyes does not exceed 5 fish eye/m2 when measured under a microscope at a multiplication of 100. It is the examiner's position that the requirement of measuring the film under a microscope does not further define the claimed material. The protecting film (C) would contain the same number of fish eyes at the given diameter no matter how it is evaluated.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-10, 13-19, 21-25 and 28-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Taguchi (US 4,360,582). Taguchi teaches a photopolymerizable element comprising a layer of a photopolymerizable composition and a film support made of a transparent material. In order to produce a resist image on a substrate, the photopolymerizable layer is applied to a substrate, exposed imagewise to actinic radiation and developed to form an image (c. 3, l. 20-46). The said element may further comprise a strippable protective film provided on the other surface of the photopolymerizable composition layer for preventing blocking at the winding step and adhesion of dust during handling (c. 3, l. 62-68). Appropriate materials for the said protective film include polyethylene terephthalate, polypropylene film, polyethylene film, cellulose triacetate film, polyamide and polyethylene laminated paper (c. 10, l. 15-23). Taguchi teaches that the thinner the photopolymerizable layer, the more the resolution is improved (c. 9, l. 17-19). Example 1 exemplifies a solution comprising poly(methyl methacrylate) as an organic binder, a photopolymerization monomer, and a photoinitiator coating onto a 50 μ-thick polypropylene film and dried to form a photopolymerizable layer having a dry thickness of 10 μ. The said layer was then laminated onto a 20 μ–thick poly(methyl methacrylate) support film. The polypropylene film was then stripped and the said layer was laminated to a treated copper-clad epoxy resin fiberglass substrate. The formed element was then exposed to actinic rays and developed to form a negative image. An etching process was then preformed to remove the copper at the areas unprotected by the resist image (c. 16, l. 30-c. 17, l. 17).

While Taguchi is silent on fish eyes, it clearly teaches the use of a polypropylene protective film, which clearly anticipates the limitations of the instant claims (see instant claims 4 and 28).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 11 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi (US 4,360,582 A) as applied to claims 1-10, 13-19, 21-25 and 28-37 above, and further in view of Hatanaka (US 6,133,343). Taguchi as discussed above teaches all the limitations of the instant claims except the specific compounds set forth in instant claims 11 and 26. Taguchi does however teach that the taught photopolymerizable monomer is an ethylenically unsaturated compound having at least 2 unsaturated bonds in their molecule. It is the examiner's position that one of ordinary skill would have been motivated to use any ethylenically unsaturated monomer, which has at least 2 unsaturated bonds in the taught composition of Taguchi. It is well known in the art that bisphenol A polyoxyalkylene dimethacrylates are polyfunctional compounds. This position is supported by the teachings of Hatanaka which teach that 2,2'di(4-methacryloxy polyethoxyphenyl) propane, which is a type of Bisphenol A polyoxyalkylene dimethacrylate and trimethylolpropane tri(methyl)acrylate are poly-functional (meth)acrylates (c. 6, l. 9-28). Taguchi teaches that

trimethylolpropane tri(methyl)acrylate is a suitable monomer. One of ordinary skill in the art would have been motivated to substitute a 2,2'di(4-methacryloxy polyethoxyphenyl) propane of Hatanaka for the trimethylolpropane tri(methyl)acrylate of Taguchi and expect reasonably similar results. Motivation is based on the concept that similar compounds will produce reasonably similar results.

8. Claims 12 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi (US 4,360,582 A) as applied to claims 1-10, 13-19, 21-25 and 28-37 above, and further in view of Hoffmann (US 4,710,446 A). Taguchi as discussed above teaches all the limitations of the instant claims except the specific initiators set forth in instant claims 12 and 27. Taguchi does however teach that the photopolymerizable layer comprises a photopolymerization initiator wherein the kind of initiator to be used is not particularly critical and any known photopolymerization initiator can be used (c. 6, l. 42-45). It is the examiner's position that 2,4,5-triarylimidazole dimer is a well-known and conventional photoinitiator. This position is supported by the teachings of Hoffmann which teach that photoinitiator systems conventionally used for resist layer include benzophenone, 2,4,5-triarylimidazole dimmers and mixtures thereof (c. 6, l. 9-27).

Response to Arguments

9. Applicant's arguments with respect to the instant claims have been considered but are of little moment in view of the new ground(s) of rejection.

10. The rejection of the claims over the prior art of Hilger in view of Fifield is hereby withdrawn. The examiner notes that applicants argue that the defects of Fifield are macroscopic unlike the microscopic fish eyes disclosed in the present invention. The

examiner is of the position that the protecting film (C) would contain the same number of fish eyes no matter how it is evaluated. Further, the claims require that the number of fish eyes have at least 80 μm. Therefore, it is possible to have fish eyes, which are visible with the naked eye.

11. The declaration evidence filed on December 11, 2002 has been reconsidered. In the interview of April 2, 2003, the examiner set forth that the declaration evidence showed superior results for a polypropylene film when compared to a polyethylene film. However, Taguchi clearly teaches using a protective film of polypropylene. The said declaration fails to compare the polypropylene of Taguchi with that used in the claimed invention. Absent any evidence and any teaching to modify the polypropylene, one would expect that the polypropylene of the prior art and that of the present invention are identical. Therefore, would have identical properties and results.

12. Further, the examiner notes that the independent claims of the present invention do not require a specific material to be used. There is no evidence on the record that the polypropylene of the instant examples would have superior results when compared to polypropylene of Taguchi.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette C. Thornton whose telephone number is 571-272-1336. The examiner can normally be reached on Monday-Thursday from 8:00 am to 6:30 pm.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F. Huff, can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yvette Clarke Thornton
Patent Examiner
Art Unit 1752

yct
March 18, 2004